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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/706,505  | 11/11/2003  | Robert E. Carlson    | 14095.1USC5         | 7224             |
| 7590  | 06/29/2006  |                      | EXAMINER            |                  |
| Mark T. Skoog<br>MERCHANT & GOULD P.C.<br>P.O. Box 2903<br>Minneapolis, MN 55402-0903 |             |                      | SHIBUYA, MARK LANCE |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1639                |                  |

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                             |                     |  |
|------------------------------|-----------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>      | <b>Applicant(s)</b> |  |
|                              | 10/706,505                  | CARLSON, ROBERT E.  |  |
|                              | Examiner<br>Mark L. Shibuya | Art Unit<br>1639    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 March 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 78-130 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) 78-130 are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

1. Claims 78-130 are pending.

***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 79-86, 98, drawn to methods of making a heterogeneous building block array, comprising coupling a plurality of building blocks to the solid support in spots through covalent bond, classifiable in class 435, subclass DIG 49.
- II. Claims 85, 87-89, 91-95, 98, drawn to methods of making a heterogeneous building block array, comprising coupling a plurality of building blocks to the solid support in spots through electrostatic interaction between the building block and the support, classifiable in class 435, subclass DIG 49.
- III. Claims 96-98, drawn to methods of making a heterogeneous building block array, wherein the coupling comprises interaction between hydrogen bond donor and a hydrogen bond acceptor, classified in class 435, subclass DIG 49.

- IV. Claims 99-102, drawn to methods of making a receptor surface or an artificial receptor, classifiable in class 435, subclass 7.1.
- V. Claims 103, 104, drawn to methods of using an artificial receptor comprising a first and a second heterogeneous array, classifiable in class 435, subclass 14.
- VI. Claims 106-111, drawn to a composition comprising a support and a plurality of building blocks coupled to the solid support in spots through covalent bond, classifiable in class 436, subclass 86.
- VII. Claims 112-114, 117-120, drawn to a composition comprising a support and a plurality of building blocks coupled to the solid support in spots through electrostatic interaction between the building block and the support, classifiable in class 436, subclass 86.
- VIII. Claims 121, 122, drawn to a composition and artificial receptor, comprising a support and a plurality of building blocks coupled to the solid support in spots through a hydrogen bond acceptor, classifiable in class 436, subclass 86.

IX. Claims 124, 127, drawn to a heterogeneous building block array, classifiable in class 435, subclass 40.

The inventions are distinct, each from the other because of the following reasons:

The Inventions of Groups I-V are directed to related processes. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, the methods of Groups I-III and IV are drawn to methods of making a heterogeneous building block array and artificial receptor surface, respectively, which are materially different functions and effects from a method of using an artificial receptor and arrays, as in Group V. The methods of making arrays of Groups I-III may involve positioning spots of specified pluralities of building blocks in precise, identifiable ordered locations and so may have a materially different mode of operation and effect from the method of making a receptor surface, such as a lawn of building blocks, that could bind a single ligand, as in Group IV. The methods of making of Groups I-III comprise couplings building blocks to supports, wherein the couplings are bonds having materially different natures, so that the steps in making the different bonds will have materially different modes of operation.

The Inventions of Groups VI-IX are directed to related products. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, the array product of Group IX may comprise spots of specified pluralities of building blocks in precise, identifiable ordered locations and so may have a materially different mode of operation and effect from a product comprising a receptor surface, such as a lawn of building blocks, that can bind a single ligand, as in Groups VI-VIII. The products of Groups VI-VIII comprise building blocks coupled to supports, wherein the coupling bonds have materially different natures, and so have materially different design and modes of operation.

The Inventions of Groups I-IV and the Invention of Groups VI-IX are related as process of making and products made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the methods of Groups I-IV may be used to make biophobic surfaces, which is a materially different product from the arrays and receptors of Groups VI-IX.

The Inventions of Groups VI-IX and the Invention of Group V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the array and receptor products may be used as surfaces upon which to culture cells, which is a materially different use from using arrays to identify building blocks from which to make artificial receptors.

Claims 78, 90 link(s) inventions of Groups I, II and III. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), claims 78 and 90. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104. Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Claims 105, 115, 116, 123, 125, 126, 128, 129, 130 link(s) inventions of Groups VI, VII and VIII. The restriction requirement between the linked inventions is subject to

the nonallowance of the linking claim(s), claims 105, 115, 116, 123, 125, 126, 128, 129, 130. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104 Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim(s) including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. In re Ziegler, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

### ***Election of Species***

3. This application contains claims directed to the following patentably distinct species: Coupling through covalent bond, electrostatic interaction or mixture thereof.

The species are independent or distinct because they involve different atomic structures.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 99-102, 103, 104, 124 are generic.

4. This application contains claims directed to the following patentably distinct species: building block comprising negative charge, positive charge, hydrogen bond donor, hydrogen bond acceptor, hydrophobic moiety, or a combination thereof. The species are independent or distinct because they have different atomic structure.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 100, 102, 103, 104, 116, 126, 127, 128, 130 are generic.

5. This application contains claims directed to the following patentably distinct species: A covalent bond between a specified group of the building block and a specified group of the support. The species are independent or distinct because the different groups have materially different molecular structures.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 78, 79 are generic.

6. This application contains claims directed to the following patentably distinct species: Coupling comprising a specified bond. The species are independent or distinct because the different bonds have materially different atomic/molecular structure. An election consonant with the election of species according to above paragraph 5 would be appreciated.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 78, 80-84, 105-111 generic.

7. This application contains claims directed to the following patentably distinct species: An electrostatic interaction between a specified group of the building block and a specified group of the support. The species are independent or distinct because the different groups have materially different molecular structures.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 87-89, 90-93, 105, 112-115, 116-120 are generic.

8. This application contains claims directed to the following patentably distinct species: Coupling between a specific hydrogen bond donor and acceptor. The species

are independent or distinct because the different couplings have materially different atomic/molecular structure.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 90, 96, 97, 121, 122, are generic.

9. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

10. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shibuya whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Mark L. Shibuya  
Examiner  
Art Unit 1639